

pathic bleeding, complete amenorrhea was obtained in 41; in three patients there was amenorrhea for a few months and then the menstruation returned but in very small amount, while in one patient menstruation continued unchanged in spite of the fact that she had been subjected to 16 series. Of course in all of these patients a preliminary curettage was performed in order to rule out the possibility of a malignant tumor being the cause of the disturbance. The results that were obtained in uterine fibroid cases were also very satisfactory. There were 168 cases that were subjected to the rays, most of which were bleeding freely when the treatment was undertaken. Of these patients there are 108 that have not had any bleeding for over a year, 52 have been free from bleeding for over three months but it has not yet been a year since the last treatment, so that it is too early to tell the ultimate result. Eight patients have had a return of the bleeding, but in four of these a single massive treatment served to cause a permanent amenorrhea, while in the remainder the treatment was absolutely without effect. These results are certainly very satisfactory when we consider that these patients have been freed from their chief symptom, bleeding, without any danger to life during the course of their treatment. Many of these patients had only 20 to 30 per cent. of hemoglobin when they began treatment, but the blood constantly improved and by the time the treatment was completed they were in such a condition as to be able to carry on their usual duties. The question is often asked relative to the manner in which the roentgen rays produce these results, that is, whether the influence of the rays is on the uterus itself or whether it is merely by the effect on the ovaries that the amenorrhea is produced. Mandach states that in his work he has paid special attention to the size of the uterus before and after treatment and he concludes that there is practically no change in the uterus, so far as size is concerned, in the large majority of cases. Therefore he believes that the maximum and principal effect of the rays is due to the ovarian atrophy which is analogous to a castration.

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**Renal Fluoroscopy at the Operating Table.**—BRAASCH and CARMAN (*Jour. Am. Med. Assn.*, 1919, lxxiii, 1751) comment upon the difficulties involved in many cases of renal stone of actually finding the calculus after the patient is on the table and the kidney is exposed. It is apparent that a more accurate method of examination of the kidney at the time of operation is desirable since the usual roentgenographic examination at the operating table is an awkward procedure and requires too much time. It would seem that if fluoroscopic examination when the kidney is brought out of the wound could be made practical, the various difficulties surrounding lithotomy would be readily overcome. Taking advantage of the recent improvement in fluoroscopic apparatus, they have employed for this purpose a machine which is essentially the same as that used in the base and field hospitals of the army, with certain minor changes which make it adaptable to civilian practise. Such an instrument consists of a transformer and autotransformer enclosed in a metal cabinet mounted on large castors for portability. To the cabinet is attached a tube stand with a horizontal arm having universal joints for supporting the tube. The tube is of the Coolidge radiator self-rectifying type, mounted in a lead glass shield. The unit is small and

compact, requiring less than  $2\frac{1}{2}$  square feet of floor space. It is of light weight, is portable, and has no moving parts which might cause noise and vibration. The current is turned on and off either by a hand or a floor switch. These portable units may be operated from the ordinary lamp socket without special wiring. As an essential preliminary in the technic, the roentgen-ray operator should wear goggles of smoked glass for about fifteen minutes before the observation is to be made in order that he may have the necessary dark-accommodation and retinal perception. The roentgen-ray unit should be placed as close to the operating table as possible and the rays focussed through a small diaphragm so that they will pass through the delivered kidney on the fluoroscopic screen. When the fluoroscopist is ready to make the roentgenoscopic examination, the hooded screen held in the left hand is placed over the eyes and the goggles are removed and the current is turned on by means of a foot switch. In the right hand is held a sterilized metal-tipped rod 18 inches long with which the fluoroscopist accurately points to the stone shadow in the kidney. The exposure is short, requiring little more than a flash and the various details can be arranged so that there is no interference with surgical asepsis.

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**Etiology of Tubal Pregnancy.**—MILLER (*Surg., Gynec. and Obst.*, 1919, xxix, 560) has had a dozen or more cases with a history about as follows: A woman misses her period and not wishing to go through pregnancy, begins after a few days to take drugs to bring on menstruation or to produce an abortion, or perhaps she introduces catheters or other bodies into the uterus. After an interval of a few weeks, she exhibits the signs and symptoms of a tubal pregnancy and operation shows this to be the true condition. The number of such cases which he has had has been so great and the histories so typical that he has been forced to the conclusion that there is a causal relation between the taking of oxytocics, and perhaps the other measures commonly employed in the production of an early abortion, and tubal pregnancy. Although he has no definite or experimental data to confirm such a conclusion, the arguments in its favor can be briefly stated as follows: (1) Impregnation can occur just before a menstrual period. (2) The length of time between the fertilization of the ovum and its implantation in the uterine cavity is generally given as between seven and nine days, but it may be longer. (3) Anything which interferes with the passage of the ovum along the Fallopian tube is recognized as a cause of tubal pregnancy, such as tumors in the uterine wall, chronic salpingitis and torsions of the tube. Ergot and similar drugs produce contractions of the uterine muscle and perhaps of the tube and the introduction of foreign bodies into the uterine cavity likewise produces such contractions. These contractions of the uterus must interfere with the passage of the fertilized ovum down the tube and thus they would tend to the production of a tubal pregnancy. Thus it seems entirely possible to produce a tubal pregnancy in the attempts to bring on an early abortion.

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**Temporary Sterilization of the Female.**—In those cases where it is advisable to produce a temporary sterilization of the female, TURENNE (*Surg., Gynec. and Obst.*, 1919, xxix, 577) of Uruguay has suggested the